Fact Sheet:
Arsenic in the Environment

What is arsenic?

Arsenic is a naturally occurring element found in the earth’s crust and is classified as a semi-metal or “metalloid”. Many substances that contain arsenic occur naturally, while others are made by humans. Exposure to arsenic can be through air, soil, water and food.

Arsenic in soil

All soil contains some amount of arsenic. However, in most cases these levels do not post a risk to human health or the environment.

Sources of arsenic exposure

Everyone is exposed to low levels of arsenic because arsenic occurs naturally in the environment. Most arsenic absorbed into the body is converted by the liver to a less toxic, water soluble form that is eliminated in the urine. Arsenic does not have a strong tendency to build up in the body, except at high exposure levels. The most common source of exposure to arsenic is from food, particularly shellfish, beef, poultry, grains and dairy products. Other sources of arsenic can include:

1) Natural ores. Base-metal mining/smelting can result in the release of arsenic into the environment. That’s why the areas of highest contamination are often in the vicinity of mining and smelting operations. People living in those areas may be exposed to higher concentrations in their soil, air, and drinking water. Ministry regulations control the levels of arsenic that are emitted to ensure the safe protection of the environment.

2) Agricultural soils. All soil contains some amount of arsenic. Elevated levels of arsenic can be found in agricultural soils such as old orchards where insecticides and herbicides containing arsenic were historically used. For young children, arsenic in soil may be of concern because of their hand-to-mouth activity.

3) Coal. Since arsenic is also present in coal, elevated soil concentrations can occur around coal-burning facilities. Ministry regulations control the levels of arsenic that are emitted to ensure the safe protection of the environment.

4) Pressure-treated woods. The use of arsenic-based wood preservatives has led to higher levels of arsenic in soils where there are wooden structures such as fences. While pressure-treated wood is still available for industrial use, it is no longer used for residential purposes. For further information on the health effects of pressure-treated wood (i.e. chromated, copper and arsenate treated wood), please contact Health Canada's Pest Management Regulatory Agency at www.pmra-arla.gc.ca.

5) Drinking water. Treatment devices ensure any potential arsenic is removed from municipal drinking water. Contact your local public health authority if you suspect your private water supply is contaminated with arsenic.

6) Dust. People who inhale inorganic arsenic dust or fumes, such as those who work in or around smelters, may experience increased health risks such as lung cancer. Though uncommon, inorganic arsenic dusts may also result in mild skin conditions. Contact your local public health authority or doctor if you have any health concerns.

How can arsenic affect my health?

Contact your local health unit or medical doctor if you are concerned about being exposed to arsenic or have questions about health effects.

How can I get more information?

If you have questions about arsenic-contaminated soil, you can contact your local Ministry of the Environment office. Visit our website at www.ene.gov.on.ca for contact information and more details.